June, 1998

Vol. 9 No.2

NYFA Newsletter

New York Flora Association
of the New York State Museum Associates

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Aliens in Our Midst: More on Cultivars Loose in the Wildes of New York

by Warren F. Broderick

On several occasions in 1997, field botanists working on a floristic survey of Grafton Lakes State Park, for the Rensselaer-Taconic Land Conservancy, approached me, seeking identifications for former garden escapes that had become naturalized into the park's flora. With my avid interest in historic garden and landscape plants of the Northeast, I feel far more comfortable identifying these cultivated species than, say, a problematic grass or sedge.

The specimen in question was a graceful plant with slender, glabrous, linear-lanceolate leaves and attractive, white, broadly bell-shaped flowers -- one of a population of plants that had spread from an old garden to a nearby grassy, roadside bank.

Since the project botanists had not encountered it previously, this plant seemed truly alien in appearance to them. I recognized it as the cultivated variety "alba" of *Campanula persicifolia* L., the "willow bellflower," a popular, herbaceous perennial of old-fashioned American gardens. It is best described in Bailey's *Garden of Bellflowers* (1953), along with an excellent botanical drawing by the author. While *C. persicifolia* is uncommon, it is by no means rare in our flora as a garden escape, and is included in Mitchell and Tucker (1997), but not listed in either Gleason (1952) nor in Gleason and Cronquist (1991). It is listed in Fernald (1950), along with other garden escapes, but one can not key it there.

Willow bellflower - *Campanula persicifolia* L.
A showy garden escape naturalized in scattered locations across NY

The difficulty encountered in the identification of this specimen illustrates a larger problem, namely the shortcomings of the standard technical botanical manuals in their coverage of garden escapes. While some alien species (like *Salix atrocinerea*) have only appeared recently in our flora, and were unknown or not widespread when the 50 year-old works were published, a number of other garden escapes have been well-known, well-established and naturalized in the Northeast for many years. Some of these are treated in manuals, and some are not. Possibly the authors of these books were so absorbed in documenting the native flora that they neglected certain ornamentals that they had not personally encountered in the wild.

I suggest that we need to learn as much as possible about garden escapes. As a conspicuous part of our

flora, they should be studied to determine the plant communities in which they become naturalized, whether they persist outside cultivation, and if they have the potential to become invasive. The study of garden escapes in the wild is also important because it is closely linked to the fascinating history of the development and abandonment of American gardens.

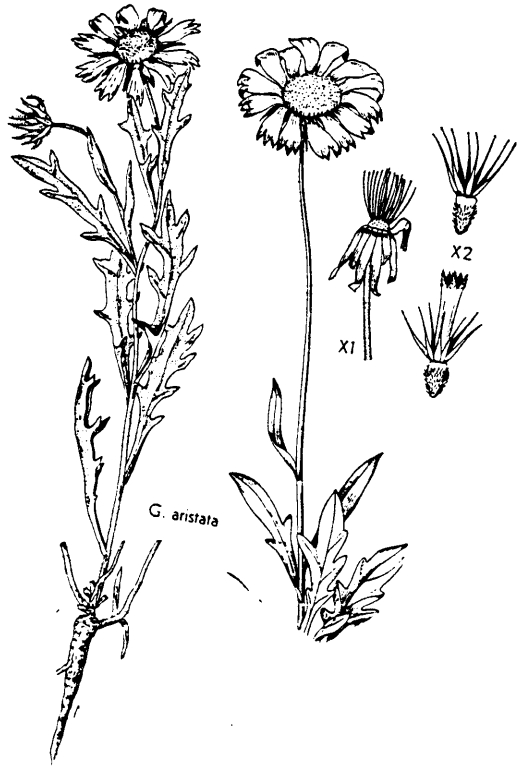
The attractive, non-invasive willow bellflower is a welcome addition to our flora where it has become naturalized, but we have quite different sentiments when we encounter other garden escapes such as certain species of *Berberis* and *Lonicera*.

There is no dearth of available literature for the identification and study of garden escapes. The first general work usually consulted in Bailey's *Hortus Third* (1976), but I sometimes find the information, including nomenclature, outdated. A currently-accepted standard reference work is Griffiths' multi-volume *New R. H. S. Dictionary of Gardening* (1992), which painstakingly updates older editions, and includes many finely detailed botanical drawings. If the list price of $1375 would break your budget, a condensed edition, known as *Index of Garden Plants* (1994) is available that costs less than $100, but lacks the illustrations.

A number of general books on herbaceous garden perennials have been published. I consult a variety of these, but have found Allan Armitage's *Herbaceous Garden Perennials* (1989) the most useful.

For tree, shrub and vine identification, there are likewise many works to consult. The standard reference, Alfred Rehder's *Manual of Cultivated Trees and Shrubs* (1940) has become quite outdated. Gerd Krüssmann's multi-volume *Manual of Cultivated Broad-leaved Trees & Shrubs* (1984-86) and his matching *Manual of Cultivated Conifers* (1985) contain excellent, detailed drawings. Another volume, useful for its thousands of sharp photographic illustrations is Michael Dirr's *Manual of Woody Landscape Plants* (1990). Also noteworthy is John Farrer's *Trees of the Northern United States and Canada* (1995). I find George Symond's pair of books, *The Tree Identification Book* (1958) and *The Shrub Identification Book* (1963) valuable for their photos, and Donald Wyman's *Shrubs and Vines for American Gardens* (1969) and *Trees for American Gardens* (1990) useful for their descriptions and historical information. Both older and more recent monographs are, of course, available for a number of genera.

I recall stopping along the Thruway in late summer to examine the brightly-colored flowers of a plant growing along a roadside bank, which had doubtless spread from a planted "wildflower" seed mixture. The plant was densely pubescent, of vigorous growth habit, and had brightly colored ray flowers of various shades of red and orange. I recognized it as a *Gaillardia*, but the plants, while similar, didn't correspond with the either *G. aristata* or *G. pulchella*, the two species listed as occasional garden escapes in Gleason (1952) and Gleason and Cronquist (1991).



***Gaillardia* × *grandiflora* Van Houtte**
These hybrid cultivars spread after cultivation, and are the plants called "*G. aristata*" in the manuals.

Intrigued that I might have located an addition to New York's flora, I began a search that led to apparently the only thorough treatise on the subject: "The History of Cultivated Gaillardia" by Warren Stoutamire (1960). The author described plants like those I had observed as *Gaillardia* × *grandiflora* Van Houtte, a showy, variably-colored hybrid between the above-mentioned species, which had replaced the tender, short-lived, yellow-rayed perennial herb, *G. aristata* in cultivation. The species from the wild has apparently never been used widely in

horticulture. Armed with this additional information, I went to Dick Mitchell, who determined that the plants listed as *G. aristata* in northeastern manuals and other books, including the (1997) New York checklist, were, indeed, hybrid *G.* × *grandifora*, of horticultural origin.

One of my favorite historic garden escapes is the Pheasant's Eye" Narcissus, a charming fragrant, short-cupped daffodil that blooms in early June in abandoned gardens, and occasionally is naturalized in the wild. Its discovery at Grafton Lakes State Park led me to further research it and its confusing, seemingly contradictory nomenclature. Fernald (1950) and Gleason (1952) simply state that *Narcissus poeticus* is an infrequently naturalized species, with no mention of subspecies or varieties. The basic reference works on cultivated plants: Bailey (1976); Tutin *et al.* (1980); Griffiths (1992) disagree on the nomenclature, but, fortunately, the best and most recent monograph on the genus *Narcissus*, by John Blanchard (1990), solves many problems.

Blanchard describes in detail the natural history, nomenclature, and garden history of both *N. poeticus* and its close relative, *N. radiiflorus*. European botanists have devoted serious study to this group within the genus *Narcissus*. One might assume from Fernald (1950) and Gleason (1952) that the daffodil we find as an escape from old gardens is the typical variety, *N. poeticus var. poeticus*, the ancient "Poet's Narcissus" native to many mountainous regions of Europe. However, true *var. poeticus* has a yellow corona and barely-reflexed petals. According to Blanchard and other authorities, this particular variety, while valuable in breeding, has never been a successful garden plant. The "Pheasant's Eye" daffodil we are familiar with has a green-centered, discoid corona with a crimson rim, and noticeably recurved petals.

The well-known "Pheasant's Eye" daffodil is, in fact, *Narcissus poeticus var. recurvus* (Haw.) Fernandes, a naturally-occurring variety native to alpine France and Switzerland. Cultivated since the 17th century, it is popular for its brilliantly-colored corona, fragrance, and late flowering season. Jefferson-Brown (1991) states that, while it is unlikely that the typical variety still exists in cultivation, *var. recurvus* "responded magnificently to cultivation in Holland, and became one of the widest grown of daffodils." Thus, the typical variety of the species may have never grown in America, except possibly in a botanical garden. Given the above information, the current update of the state checklist (1997) has now been amended.

In the future, I intend to submit detailed articles on cultivated species of the genera *Hydrangea*, *Wisteria*, *Nymphaea* and *Rosa*. For the roses, I will provide a key for the identification of garden cultivars found in the wild and at old house-places. Any suggestions you may have, or additional reference works useful in identification of cultivated species in the wild are welcomed, and should be submitted to the editor.

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Some Interesting Sandy-soil Communities at Fort Drum (Jefferson County)

by Anne Johnson

As part of an ongoing search for a certain rare wasp species, Dr. Frank Kurczewski of SUNY College of Environmental Science and Forestry in Syracuse was looking for oak savanna and pine barren habitats. He drove up to Fort Drum in Jefferson County one day toward the end of the summer of 1996 and was pleasantly surprised by what he found -- a habitat reminiscent of portions of lower Michigan, southwestern Ontario and the New Jersey pine barrens.

The southwest portion of Fort Drum sits on a sand delta laid down by an ancestral Black River at its junction with glacial Lake Iroquois. These sands are considered very young by soil scientists, meaning that they have not had much time to accumulate organic matter and begin the soil formation process. In areas near the mouth of the delta the sand reaches depths of more than 100 feet. Currently, these sands support open oak/pine forest and successional northern sandplain grasslands.

Dr. Kurczewski wondered about the historical lineage of this landscape. Were these oak savanna and pine barrens the result of previous logging followed by man-made fires and subsequent military activity? Did they reflect an ancient landscape governed by the limitations of excessively well drained, nutrient deficient sands? If the latter was the case, then there was a chance that the rare wasp species, which historically required large, open sandy areas, might be present today. To answer this question, he tracked down 1790's to early 1800's land survey field notes (not an easy matter) for 384 lots of Macomb's Great Lot Number Four.

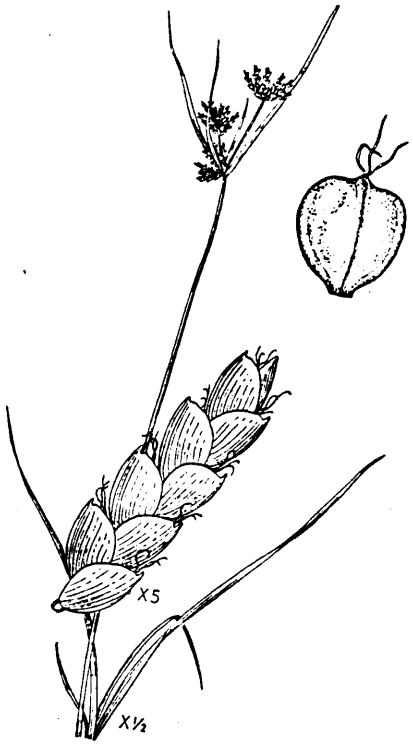
These field notes contained lists of trees, brief descriptions of land condition, landscape features, and some notes on soils (for instance, "land middling poor, poorly watered by two small runs in the west; sandy soil;" and "rough and rocky"). These data, along with the digitized boundaries of the original lots, have now been incorporated into Fort Drum's Natural Resources GIS database.

Aerial photographs from 1945 and 1960 show many open areas and an obvious savanna-like aspect. Photographs of the original Pine Camp, taken at its establishment in 1908, show an area with very few trees and much open space. The original land survey field notes, however, speak primarily of lots with mesic deciduous forest, noting only occasional small, sandy openings. Only 28% of the lots on sand were pine-oak dominated. These lots were concentrated near the great bend of the Black River, and this is the area that currently supports the majority of the open oak woodland and pine barren-type habitats.

Additional historic notes described pine trees covering the landscape for as far as the eye could see, and indicate that immense quantities of pines were cut to supply local sawmills for a number of years. Hough, in his *History of Jefferson County in the State of New York* (1854), says "Immense quantities [of pine timber] have been cut off, and fires have run over more or less all of the tract, every few years, since 1804, so that between the two agencies, they have been mostly stripped of their timber, leaving a light, barren, sandy soil of little value."

The soil was (and is) so sterile that it is doubtful that anyone farmed the area for an extended period of time after the logging, and in 1908 the federal government bought the area then known as the Pine Plains. The similarity of the landscape on Fort Drum's sandy soils to the oak openings in Michigan and southwestern Ontario would indicate that the activities of settlers and the military have similarly affected the landscape. It is conceivable that, after logging and burning, the New York area was very slow to recover and is now being maintained in an early successional state by military vehicular travel and other activities.

The sandy communities at Fort Drum support a unique assemblage of native plant species, including some rare sedges, that require sand and disturbance (*Cyperus houghtonii*, *C. schweinitzii*, and *Carex houghtonii*). More common and characteristic species include common hairgrass (*Deschampsia flexuosa*), a sedge (*Carex lucorum*), stiff-leaved aster (*Aster*



***Cyperus houghtonii* Torrey**
Houghton's sedge is one of the rare plants found in the dry sandy barrens of Fort Drum, Jefferson County, New York

linariifolius), pinweed (*Lechea intermedia*), common rockrose (*Helianthemum canadense*), trailing arbutus (*Epigaea repens*), bastard toadflax (*Comandra umbellata*), and various grasses: (*Panicum depauperatum, P. linearifolium* and *Oryzopsis pungens*). Butterfly-weed (*Asclepias tuberosa*), at the northern extreme of its range, and quite rare in our area, is distributed sporadically. Characteristic trees include native pitch pine (*Pinus rigida*), white pine (*P. strobus*), northern red oak (*Quercus rubra*), and white oak (*Q. alba*), also far north in their ranges. The introduced species winged pigweed (*Cycloloma atriplicifolium*) and knapweed (*Centaurea maculosa*) are found along the more disturbed roadsides, and species planted for soil stabilization include red pine (*Pinus resinosa*), jack pine (*Pinus banksiana*), pitch pine, and beach grass (*Ammophila breviligulata*). This area also provides important habitat for grassland bird species: upland sandpiper (*Bartramia longicauda*), grasshopper sparrow (*Ammodramus savannarum*), and savannah sparrow (*Passerculus sandwichensis*).

Besides information on the sandy areas of the post, old field notes revealed some interesting pre-settlement features on the more commonly occurring loamy soils. These loamy soils were heavily forested in the early 1800's, then extensively cleared and farmed. After an additional purchase by the federal government in 1945, the land began to revert, and many areas are now heavily forested.

Beech (*Fagus grandifolia*) was by far the most dominant tree species (all but one of the 384 lots had beech growing on it, and 89.6% of the Fort Drum lots had beech as one of the top three dominant species). Hemlock (*Tsuga canadensis*), maple (*Acer* sp.), elm (*Ulmus* sp.), and basswood (*Tilia americana*) were also common and dominant as components of a mesophytic mixed forest. Elm was recognized as an important species also in the 1955 Fort Drum Forest Management Plan, which speaks of elms with diameters greater than 16 inches as co-dominants in many stands.

Beech is currently found as a subordinate species only; elms are found only in reverting fields and wetlands (and then only relatively young trees), and basswood and hemlock are dominant in places, but their distribution is limited. Interestingly, there was once quite a lot of black ash (*Fraxinus nigra*), a species that occurs only sporadically now. Black birch (*Betula lenta*) and walnut (*Juglans nigra*) were present during the original surveys but do not appear to be present now. Three entries for maples were recorded - "maple", "rock maple", and "white maple".

We assume that the early surveyors did not differentiate between red (*A. rubrum*) and sugar (*A. saccharum*) maples, as both the white maple and rock maple occurred in only a small portion of the lots, while "maple" occurred in 91.4% of the lots. Both red and sugar maple are now common, with red being far more prevalent than sugar. Currently, there are also scattered stands of black and silver maples on the post; though not in the areas noted during the original survey.

Fort Drum maintains an active natural resources inventory and monitoring program on its 107,265 acres. Both the role of military activity in maintaining the open character of the sandy areas and the fragility of the sandy communities have been recognized and incorporated into management documents. These areas illustrate a case where military and conservation uses mesh. A research project involving the restoration of native grasslands on sandy soils has been planned and will be implemented in what are now barren areas, due to borrow activities that occurred during the installation and expansion in the mid-1980's. Other

management activities in the sandy areas include prescribed burns and leafy spurge (*Euphorbia esula*) control.

The future of the unique sandy communities on Fort Drum appears secure, due to an active natural resources management program and concern on the part of the training community that their training areas are maintained as useable lands. And, in case you are wondering, Dr. Kurczewski never did find the wasp he was looking for!

Letters to the Editor

A couple of comments regarding some of the species mentioned in the [March] newsletter. *Lycopodiella caroliniana* was found by Harry Ahles in the `70s, I believe, at Hadley, Mass. I was taken to the site [which] has since been destroyed, when a housing development was built there.

I found another site for *Utricularia inflata* in Hopkinton, MA, two years ago. This is the second site in Massachusetts. *Utricularia radiata* is common along the acidic Coastal Plain throughout New England up to New Brunswick. I would have thought it occurred in the acidic waters of the Adirondacks.

Barre Hellquist,
Mass. College of Liberal Arts

I was very interested to hear of a population of Carolina club moss in Massachussetts. The location, at Hadley, MA, puts it well inland and north of any station I had previously heard about. Even so, the new location at Lake George now establishes the extreme northern and inland point of its range.

Also: we heard of a second Massachusetts station for *Utricularia inflata* right after we wrote our 1994 paper on the first occurrence of the species in New York. Is your find of about two years ago the one we heard about, or a possible third MA population?

R. Mitchell, Editor

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Just read your NYFA Newsletter. Congratulations to all of you on the great finds! The item on *Lythrum hyssopifolia* caught my eye. When we were doing our [Pennsylvania] annotated checklist and atlas, Shirley Graham, who reviewed the Lythraceae for us, pointed out that *L. hyssopifolia* is a European plant. Indeed, *Flora Europaea* describes it as occurring throughout central and southern Europe in disturbed or seasonally flooded ground. Here in PA, we have some early collections from Bucks County (1865), but always "in ditches or along roadsides." It's still in places like that, but it is showing up with increasing frequency and abundance along compacted, mowed, goose-infested shorelines of numerous impoundments in county and state parks, along with *Cyperus brevifolius* and *Arthraxon hispidus*. It seems to be behaving like an adventive species, as was suggested by Fernald. We have dropped it from the PA list of "Species of Special Concern."

Ann Rhoads, Morris Arboretum

Thank you, Ann. You have reaffirmed my notions on that species. I hope everyone will note that, in our recent New York checklist (Mitchell & Tucker, 1997), we list *Lythrum hyssopifolium* as "doubtfully native." I marked it that way because I believed it to be an alien adventive, while The Nature Conservancy still ranked it as a rare, native species at that time. I'm pleased to see support for my view from other sources. A few more disputes of this type still need to be resolved in the future, such as the supposed New York native status of the following: 1) *Plantago pusilla;* 2) *Allium schoenoprasum*, and 3) *Tradescantia ohiensis*, which are native elsewhere in North America, but probably represent only adventives and garden escapes in New York. **Editor**

NYFA Field Trips for 1998

Trip 1: Back by popular demand: join us on a tour of the **Ice Meadows South of the Glen** and on the botanically unique summit of **Whiteface Mountain: June 27 - 28** We will stay Saturday night near Plattsburgh, and also visit areas damaged by the recent ice storm. Come one day or both.

Trip 2: The Western Adirondack Wilderness: August 29 - 30 Led by David Hunt, we will visit Spring Pond Bog , old-growth forest areas, and communities damaged by the 1995 blowdown.

Details: contact **Bob Zaremba at (518) 273-9408 ext. 226 (Home: 274-7419) e-mail: rzaremba@tnc.org**

New York Natural History Conference - October 14-17, 1998 at the State Museum

If you are interested in attending or getting updated information on the conference, call (518) 474-5812, or e-mail **smurphy@mail.nysed.gov.** Check our website for updates at **www.nysm.nysed.gov. See you here in October. It's always great.**